AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (currently amended) A method for determining at least two spatial degrees of freedom of a creature (3) relative to an environment, comprising [[of]] the steps of:

connecting a creature to a locating member (4) including a transducer (5),

operating said transducer to determine at least two spatial degrees of freedom of the transducer relative to the environment by

i) the transducer receiving incident optical signals from at least two signal sources (9) located in the environment and recording the relative incident positions of the received signals on a surface of the transducer, [[and]]

ii) based on the recorded relative positions of the received signals, calculating ~~and using~~ directions (φ_1, θ_1; φ_2, θ_2; φ_3, θ_3;) of sight lines extending between respective signal source and the transducer, with respect to at least two of said at least two signal sources, and

iii) calculating said at least two spatial degrees of freedom of the transducer relative to the environment by using the directions of the sight lines,

the method further comprising:

determining said at least two spatial degrees of freedom of the creature from said at least two spatial degrees of freedom of the transducer, the creature and the locating member being mechanically connected relative to each other within a known limited spatial interval with respect to said at least two spatial degrees of freedom.

2. (currently amended) A method for determining at least two spatial degrees of freedom of a creature (3) relative to an environment, comprising the steps of:

connecting the creature to a locating member (4) including a transducer (5),

operating said transducer to determine at least two spatial degrees of freedom of the transducer relative to the environment by

i) the transducer receiving incident signals from at least two signal sources (9) located in the environment by means of at least one phased-array and recording the relative directions of the signals received, [[and]]

ii) based on the recorded relative directions of the received signals, calculating ~~and using~~ directions (φ_1, θ_1, φ_2, θ_2, φ_3, θ_3,) of sight lines extending between respective signal source and the transducer, with respect to at least two of said at least two signal sources, and

iii) calculating said at least two spatial degrees of freedom of the transducer relative to the environment by using the directions of the sight lines,

the method further comprising:

determining said at least two spatial degrees of freedom of the creature from said at least two spatial degrees of freedom of the transducer, the creature and the locating member being mechanically connected relative to each other within a known limited spatial interval with respect to said at least two spatial degrees of freedom.

3. (original) A method according to claim 2, characterized in that for said signals microwaves are used.

4. (previously presented) A method according to claim 2, characterized in that for said signal acoustic waves are used.

5. (previously presented) A method according to claim 1, wherein, when the creature (3) moves, said at least two spatial degrees of freedom of the creature are repeatedly determined by the transducer (5) repeatedly determining said at least two spatial degrees of freedom of the transducer.

6. (previously presented) A method according to claim 1, wherein, said at least two spatial degrees of freedom of the

creature (3) are determined relative to preceding values of said at least two spatial degrees of freedom of the creature.

7. (previously presented) A method according to claim 1, characterized in that said at least two spatial degrees of freedom determined for the creature (3) are recorded for mapping the movement of the creature relative to the environment.

8. (previously presented) A method according to claim 6, characterized in that said at least two degrees of freedom determined for the creature (3) are recorded for mapping the relative movement of the creature.

9. (previously presented) A method according to claim 1, characterized in that when the creature (3) moves relative to the environment at least one property of the environment is at least one of recorded and mapped.

10. (previously presented) A method according to claim 1, characterized in that said determination of said at least two degrees of freedom of the creature (3) is performed while the creature moves in a non-predictable way.

11. (previously presented) A method according to claim 1, characterized in that said determination of said at least two

degrees of freedom of the creature (3) is performed while the creature moves in a trained way.

12. (previously presented) A method according to claim 1, characterized in that when the creature (3) moves, the movement of the creature is directed by means of said at least two degrees of freedom determined for the creature.

13. (currently amended) A method for locating a phenomenon (22) in an environment, comprising the steps of:

connecting a creature (3) to a locating member (4) including a transducer (5) mechanically connected to a component (23) intended for pointing out phenomena in the environment,

directing the pointing component by the creature towards the phenomenon from at least one pointing position,

operating the transducer to determine at least two spatial degrees of freedom of the transducer relative to the environment by

i) the transducer receiving incident signals from at least two signal sources (9) located in the environment, [[and]]

ii) calculating ~~and using~~ directions (φ_1, θ_1, φ_2, θ_2, φ_3, θ_3,) of sight lines extending between respective signal source and the transducer, with respect to at least two of said at least two signal sources, and

iii) calculating said at least two spatial degrees of

freedom of the transducer relative to the environment by using the directions of the sight lines,

the method further comprising:

determining at least two spatial degrees of freedom of the pointing component from said at least two spatial degrees of freedom of the transducer, the pointing component and the transducer being mechanically connected relative to each other within a known limited spatial interval with respect to said at least two spatial degrees of freedom, and

determining at least one spatial degree of freedom of the pointed out phenomenon relative to the environment from said at least two spatial degrees of freedom of the pointing component.

14. (previously presented) A method according to claim 13, characterized in that the pointing component (23) is directed by the creature (3) towards the phenomenon (22) from two different pointing positions.

15. (previously presented) A method according to claim 13, characterized in that said at least one spatial degree of freedom of the pointed out phenomenon is determined by means of a model (28) of the environment.

16. (currently amended) A method for determining if at least two spatial degrees of freedom of a phenomenon (22) relative

to an environment is in accordance with a reference, comprising the steps of:

connecting a creature to a locating member (4) including a transducer (5),

defining a reference by the introduction of at least one condition regarding at least two spatial degrees of freedom of the locating member relative to the environment,

operating said transducer to determine at least two spatial degrees of freedom of the transducer relative to the environment by

i) the transducer receiving incident signals from at least two signal sources located in the environment, [[and]]

ii) calculating ~~and using~~ directions (φ_1, θ_1, φ_2, θ_2, φ_3, θ_3,) of sight lines extending between respective signal source and the transducer, with respect to at least two of said at least two signal sources, and

iii) calculating said at least two spatial degrees of freedom of the transducer relative to the environment by using the directions of the sight lines,

the method further comprising:

determining said at least two spatial degrees of freedom of the locating member from said at least two spatial degrees of freedom of the transducer, the creature and the transducer being mechanically connected relative to each other within a known limited spatial interval with respect to said at least two spatial

degrees of freedom, and

comparing said at least two degrees of freedom determined for the locating member with the reference so that at least one possibly occurring state in which said at least one condition is fulfilled may be recorded.

17. (previously presented) A method according to claim 16, characterized in that the locating member (4) is put by the creature (3) into mechanical contact with an object (19, 30) in the environment for fixing the locating member or a part thereof and thereby the transducer (5) relative to the object so that said at least one condition is fulfilled.

18. (previously presented) A method according to claim 17, characterized in that the locating member (4) and the object (19, 30) are moved into engagement with each other so that said at least one condition is fulfilled.

19. (previously presented) A method according to claim 16, characterized in that states in which said at least one condition is fulfilled is recorded only when a further predefined measure is performed substantially at the same time by the creature (3).

20. (currently amended) A method for determining at

least two spatial degrees of freedom of an object (30) relative to an environment by means of a creature (3), comprising the steps of:

connecting a creature to a locating member (4) including a transducer (5),

putting the locating member into mechanical contact with the object by the creature,

operating said transducer to determine at least two spatial degrees of freedom of the transducer relative to the environment by

i) the transducer receiving incident signals from signal sources (9) located in the environment, [[and]]

ii) calculating ~~and using~~ directions (φ_1, θ_1, φ_2, θ_2, φ_3, θ_3,) of sight lines extending between respective signal source and the transducer, with respect to at least two of said at least two signal sources,

iii) calculating said at least two spatial degrees of freedom of the transducer relative to the environment by using the directions of the sight lines,

the method further comprising:

determining said at least two spatial degrees of freedom ~~relative~~ of the locating member from said at least two spatial degrees of freedom of the transducer, and

determining at least two spatial degrees of freedom of the object from said at least two spatial degrees of freedom of

the locating member.

21. (previously presented) A method according to claim 20, characterized in that said at least two spatial degrees of freedom of the object (30) is determined relative to preceding values of said at least two spatial degrees of freedom of the object.

22. (previously presented) A method according to claim 20, characterized in that the locating member (4) and the object (30) are moved into engagement with each other for fixing their relative values of said at least two spatial degrees of freedom.

23. (previously presented) A method according to claim 1, further comprising the step of:

using a signal receiving direction area that constitutes a solid angle exceeding 0.2 steradianes (sr) and which solid angle is formed by the collected amount of signal receiving directions in which the transducer is arranged to receive incident signals from said signal sources (9).

24. (original) A method according to claim 23, characterized in that the signal receiving direction area constitutes a solid angle that exceeds 1 steradian.

25. (original) A method according to claim 23, characterized in that the signal receiving direction area constitutes a solid angle that exceeds 2 steradians.

26. (original) A method according to claim 23, characterized in that the signal receiving direction area constitutes a solid angle that exceeds 4 steradians.

27. (previously presented) A method according to claim 23, further comprising using of said signal receiving direction area which is topologically connected.

28. (previously presented) A method according to claim 1, characterized in that occurences caused by at least one of the presence of the creature (3) and the actions of the creature are recorded.

29. (previously presented) A method according to claim 1, characterized in that information is transferred from the locating member (4) to the creature (3) via an information communicating means (6).

30. (previously presented) A method according to claim 1, characterized in that information is transferred from the creature (3) to the locating member (4) via an information

receiving means (7).

31. (original) A method according to claim 29, characterized in that information about the viewing direction of the creature (3) is transferred.

32. (original) A method according to claim 29, characterized in that information about the movement direction of the creature (3) is transferred.

33. (original) A method according to any of claim 29, characterized in that information about the nature of the environment is transferred.

34. (original) A method according to claim 29, characterized in that information about movement paths (16) is transferred.

35. (original) A method according to claim 1, characterized in that information from the locating member (4) is transferred to at least one central computer unit (13).

36. (original) A method according to claim 1, characterized in that information from at least one central computer unit (13) is transferred to the locating member (4).

37. (previously presented) A method according to claim 1, characterized in that information from the transducer (5) is transferred to at least one computer unit (11) of the locating member (4).

38. (original) A method according to claim 1, characterized in that information from at least one computer unit (11) of the locating member (4) is transferred to the transducer (5).

39. (previously presented) A method according to claim 35, characterized in that information is transferred to the creature (3) through an information transferring means arranged in the environment and controlled by said computer unit (11, 13).

40. (previously presented) A method according to claim 39, characterized in that information from said information transferring means is transferred to the creature (3) through a representation unit (15) of the locating member (4).

41. (original) A method according to claim 1, characterized in that the nature of the environment is recorded by the creature (3) by means of a sensor.

42. (previously presented) A method according to claim 1, characterized in that said at least two spatial degrees of freedom of the transducer (5) are determined by recording the relative incident directions of the signals received by means of the transducer.

43. (previously presented) A method according to claim 2, characterized in that that said at least two spatial degrees of freedom of the transducer (5) are determined by receiving incident optical signals from the signal sources (9) in the environment.

44. (previously presented) A method according to claim 2, wherein when the creature (3) moves said at least two spatial degrees of freedom of the creature are repeatedly determined by the transducer (5) repeatedly determining said at least two spatial degrees of freedom of the transducer.

45. (previously presented) A method according to claim 2, wherein said at least two spatial degrees of freedom of the creature (3) are determined relative to preceding values of said at least two spatial degrees of freedom of the creature.

46. (previously presented) A method according to claim 2, characterized in that said at least two spatial degrees of freedom determined for the creature (3) are recorded for mapping

the movement of the creature relative to the environment.

47. (previously presented) A method according to claim 2, characterized in that when the creature (3) moves relative to the environment at least one property of the environment is recorded and/or mapped.

48. (previously presented) A method according to claim 2, characterized in that occurrences caused by the presence of the creature (3) and/or the actions thereof are recorded.

49. (previously presented) A method according to claim 2, characterized in that the nature of the environment is recorded by the creature (3) by means of a sensor.